

1. If $f(x) = x^3 - 3x + 5$, find the following:

a. $f(1)$

d. $f(2x)$

b. $f(-2)$

e. $f(x+h)$

c. $f(x-2)$

2. If $h(x) = \sqrt{x^2 - 16}$, $f(x) = x - 1$, and $g(x) = x^2$ find an expression for the following:

a. $(g \circ f)(x)$

c. $(f \circ g \circ h)(x)$

b. $(g \circ h)(x)$

d. $(f \circ h \circ g)(x)$

3. Evaluate $\frac{f(x+h) - f(x)}{h}$ if:

a. $f(x) = x^2 - 3x - 4$

b. $f(x) = 3x - 2$

c. $f(x) = \frac{1}{x}$

4. Find the inverse of each of the given functions and determine if the given function is one to one.

a. $f(x) = 3x - 2$

b. $y = x + 20$

c. $f(x) = \sqrt{3x - 6}$

5. Find the slope of the line:

a. Which passes through the points (2,-4) and (-2,7)

b. Whose equation is $-3x + 4y = 12$

c. Perpendicular to a line whose equation is $y + 3 = 2(x - 3)$

d. Parallel to a line whose equation is $y = 3(2x - 5)$

6. For each, write the equation of the line in point-slope, slope-intercept, and standard form:
- Whose slope is 3 and which passes through (2,-4)
 - Which passes through the points (2,-4) and (-2,7)

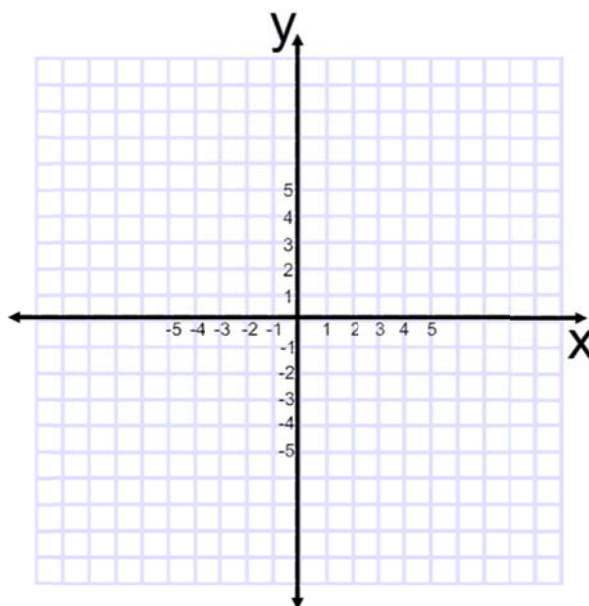
7. Express each of the following as composites of two or more functions:

- $7x - 2$
- $\frac{12}{\sqrt{x+12}}$
- $(x^4 - 6)^9$

8. Graph:

a. $f(x) = \frac{-1}{2}x + 2$

b. $f^{-1}(x)$



9. Show that $f(x)$ and $g(x)$ are inverses of each other. $f(x) = \sqrt{x-5}$ and $g(x) = x^2 + 5$

10. Use the given graphs of f and g to evaluate the expression.

- $f(g(2))$
- $g(f(0))$
- $(g \circ f)(6)$
- $(f \circ f)(6)$

